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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/736,529      | 12/13/2000  | Gerald W. Mills      | 723.040US1          | 8869             |

21186 7590 12/01/2005

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| EXAMINER |
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| ART UNIT | PAPER NUMBER |
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3729

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/736,529

Applicant(s)

MILLS, GERALD W.

Examiner

A. Dexter Tugbang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 1-8 and 11-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9,10,34-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Amendment*

1. The applicant(s) amendment filed on September 6, 2005 has been fully considered and made of record.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### *Election/Restrictions*

3. The restriction requirements in the Office Actions dated December 16, 2002 and March 24, 2004 are hereby repeated.
4. Claims 11-26 continue to stand as being withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on July 7, 2003.
5. Claims 1-8 and 27-32 continue to stand as being withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on July 26, 2004.
6. As a result of the amendment filed on September 6, 2005, a restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claim 10, drawn to affixing a solderable trace, classified in class 29, subclass 840.

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- II. Claim 33, drawn to etching a sheet of conducting material, classified in class 29, subclass 847.

The inventions are distinct, each from the other because of the following reasons:

7. Inventions of Groups I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, the invention of each Group has separate utility, or a separately usable process.

Group I requires a separately usable process of affixing a solderable trace that is not required in Group II. Group II requires a separately usable process of etching a sheet of conducting material, not required in Group I. See MPEP § 806.05(d).

8. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

9. Claim 9 link(s) the inventions of Groups I and II. The restriction requirement between the linked inventions is subject to the nonallowance of the linking claim(s), Claim 9. Upon the allowance of the linking claim(s), the restriction requirement as to the linked inventions shall be withdrawn and any claim(s) depending from or otherwise including all the limitations of the allowable linking claim(s) will be entitled to examination in the instant application. Applicant(s) are advised that if any such claim(s) depending from or including all the limitations of the allowable linking claim(s) is/are presented in a continuation or divisional application, the claims of the continuation or divisional application may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Where a restriction

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requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. *In re Ziegler*, 44 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

NOTE: Claims 34-38 will be examined along with linking Claim 9 as there would be no burdensome search for the examination of Claims 34-38.

10. Newly submitted Claim 33 is directed to an invention that is independent or distinct from the invention originally claimed for the reasons set forth above.

Since applicant has received an action on the merits for the originally presented invention (Group I), this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, Claim 33 has been withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

#### ***Claim Objections***

11. Claim 10 is objected to because of the following informalities: the term --solderable-- should be inserted after "wherein the" (line 2). Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

12. Claims 9, 37 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Lawrence 3,243,752.

Lawrence discloses a method for forming a microcoil comprising: attaching a trace (wire 22) of conductive material to a substantially planar film of flexible insulating

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material; attaching an end of the film to a mandrel (tube 20); and rolling the mandrel (tube 20) with the film attached such that when rolled, the end of the film is pulled, and the trace of the conductive material circumferentially wraps around a longitudinal axis of rolling (see either Figs. 2 or 3).

It is noted that the claimed “film of flexible insulating material” can be read as the insulative coating that covers the trace or wire (see col. 3, lines 67-72), or can alternatively be read as the insulative sheet 24. Figure 3 of Lawrence shows the “film of flexible insulating material” (coated wire 22 or sheet 24) being attached to the mandrel 20 and pulled in a clockwise direction.

Regarding Claim(s) 37, Lawrence further teaches that the mandrel (tube 20) receives an inner member (mandrel 21, see col. 3, lines 50-55). Therefore, the claimed mandrel can be said to be “hollow”.

Regarding Claim(s) 38, the mandrel 20 of Lawrence further comprises a “semi-rigid coaxial line”, which can be read as any line drawn along the flexible material of the substantially planar film.

### ***Claim Rejections - 35 USC § 103***

13. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lawrence in view of Wohlhieter 2,929,132.

Lawrence discloses the claimed manufacturing method as relied upon above in Claim 9. Lawrence does not teach affixing a solderable attaching trace to the film and soldering the trace to the mandrel.

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Wohlhieter teaches that it is conventional and well known in the art of manufacturing microcoils on mandrels or cores to attach a solderable attaching trace (terminals 13 or 14) to a film (tape 18) where the trace is soldered to the mandrel (tube 15 or bobbin 11) by the connection of the solderable attaching trace to the trace of conductive material (see col. 2, lines 8-12 and col. 3, lines 30-33). In Figure 4, Wohlhieter further teaches that the solderable attaching trace 14 is electrically isolated from the trace of conductive material (winding 12) as each is isolated or separated by tape 21.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Lawrence by affixing a solderable attaching trace to the film and soldering the trace to the mandrel, as taught by Wohlhieter, for at least the advantage of allowing the microcoil device to be electrically connected to other devices in operation.

14. Claims 34 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lawrence in view of Weatherly 4,639,708.

Lawrence discloses the claimed manufacturing method as relied upon above in Claim 9. Lawrence does not mention that the conductive material includes copper (as required by Claim 34) and that the mandrel comprises a round cross section (as required by Claim 36).

Weatherly shows that a mandrel can include a round cross section (see Figs. 2 and 3) for supporting traces of conductive material. Weatherly further teaches that conductive trace material made from copper is conventional and well known in the art of manufacturing microcoils (see col. 2, lines 1-19).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Lawrence by utilizing the copper conductive trace material and round cross sectional area of the mandrel, as taught by Weatherly, to positively support the trace of conductive material and provide an alternative material for electrical conductivity of the traces.

15. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lawrence in view of Okamura et al 5,639,566.

Lawrence discloses the claimed manufacturing method as relied upon above in Claim 9. Lawrence does not mention that the flexible insulating material includes polyimide.

Okamura teaches that polyimide is a material that provides electrical insulating characteristics in high output applications for conductive trace materials (see col. 1, lines 30-43).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the flexible insulating material of Lawrence by utilizing polyimide, as taught by Okamura, to positively provide electrical insulating characteristics in high output applications for the conductive trace materials.

### ***Response to Arguments***

16. The applicant(s) arguments filed in the response on September 6, 2005 have been fully considered, but have not been deemed to be found as persuasive.

In regards to the merits of the prior art above, the applicant(s) argue that none of the references teach “attaching...a mandrel” (lines 2-4 of Claim 9).



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The examiner most respectfully disagrees as the claimed features above were relied upon in Lawrence. First, the film of flexible insulating material in Lawrence was read as the insulating sheet of Kraft paper 24. Lawrence shows in Figures 3 and 5 that this film 24 is attached to the trace of conductive material (wire 22) because each is in direct contact with one another. Lawrence shows that the film 24 is “substantially planar” because in Figure 2, the film is flat and even in Figures 3, 4 and 5, the film 24 includes flat surfaces and thus, the film can be said to be “substantially planar”. With emphasis on the term of “substantially”, the examiner fails to see to what degree the film of flexible insulating material must be “substantially planar”.

Second, the claimed “mandrel” in Lawrence was read as tube 20. In Figure 3, Lawrence clearly shows that the end of film 24 is attached to the mandrel 20 and as the mandrel is rolled in the clockwise direction (as indicated by the circular arrows in Fig. 3), the end of the film, as well as the remaining part of the film 24, is pulled with the mandrel, as the film wraps around the mandrel.

So the examiner’s position is that Lawrence fully meets all of the limitations of at least Claim 9. The examiner simply does not understand the applicant(s) line of reasoning in that Lawrence fails to teach “attaching...a mandrel” (lines 2-4 of Claim 9).

### ***Conclusion***

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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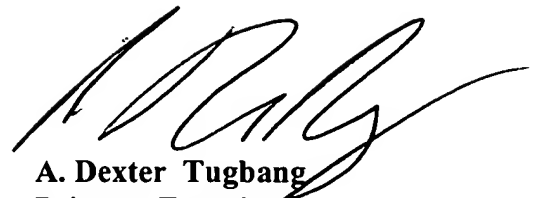
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Dexter Tugbang whose telephone number is 571-272-4570. The examiner can normally be reached on Monday - Friday 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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**A. Dexter Tugbang**  
**Primary Examiner**  
**Art Unit 3729**

November 28, 2005